

Celebrating Professor Alan Bond's 70th Birthday

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On 17 August 2016, Alan Bond turned 70. To celebrate this occasion, together with Brendan Abrahams, we organised 'The Bond Electroanalytical Chemistry Symposium (2016)' to celebrate Alan Bond's past, present, and future contributions. This special issue of the *Australian Journal of Chemistry* results from some contributions from this event and, as the reader will quickly grasp from the authorship of most of these papers, illustrates Alan's immense impact across Australasian electroanalytical and inorganic chemistry as well as the wider international community. Furthermore, these papers represent some recent examples of Alan's research – he clearly remains as active as ever with his total number of publications approaching 1000!

Alan was born in country Victoria, at Cobden, and received his undergraduate B.Sc. (Hons) and Ph.D. education at the University of Melbourne. His Ph.D. supervisor, Professor Tom O'Donnell was one of nature's gentlemen; however, Alan's research project was exceptionally challenging – exploring the chemistry of metal ions in hydrofluoric acid. This required special non-corrosive *kel-F* containers to be made just to contain the HF and these experiments were undertaken in the 'bomb-laboratory' located on the roof-top of the new Chemistry building, just in case there was an accident! Professor Ray Martin was the inaugural head of Inorganic Chemistry, and he had appointed an international team to join the Inorganic Chemistry staff, recruiting Richard Robson, Ray Colton, and Bernie Hoskins, who were all to become great collaborators of Alan's, and remain so since those early years. After Alan received his Ph.D. degree in 1971, he remained in the

department as a senior demonstrator and then research fellow until 1978, although in 1972 he won a Fulbright Fellowship to spend six months with Professor Don Smith at Northwestern University – this was his first taste for travel.

After leaving his *alma mater*, he stepped immediately into the Foundation Chair of Chemistry at Deakin University in 1978. This was an exciting time as he needed to establish his own research group as well as the new department, within the Division of Chemical and Physical Sciences at Deakin. His research students included Gordon Wallace, Sam Adeloju, and many others who were to work closely with Alan to define the electrochemical landscape in Australia. A feature of Alan's research during these early years was the use of his electroanalytical approaches for applied research. Many companies and colleagues from other disciplines found that electrochemistry could provide previously unknown insights into their research problems. Alan also broadened his collaborations with his former University of Melbourne colleagues (Ray Colton and Ray Martin) to also include researchers from Monash (Bruce West and Keith Murray), La Trobe (Tony Wedd), and ANU (Alan Sargeson). During these years at Deakin, Alan's international reputation grew and his collaborations with Keith Oldham (Trent University) began, as did his passion for international travel, with periods of study leave to Northwestern University and the University of Southampton where his collaborations with Martin Fleischmann and also his long association with the University of Oxford started, as Visiting Professor to the Inorganic Chemistry Laboratory, where he first applied his electrochemical craft to proteins with Allen Hill in 1983. After



Lisa Martin received her Ph.D. degree from the Australian National University under the guidance of Professor Alan Sargeson, prior to receiving an Alexander von Humboldt, then a Fulbright Fellowship in Germany and USA, with Karl Wieghardt and Barbara Burgess, respectively. She was appointed to Flinders University in South Australia, then after a decade to Monash University where she is currently Associate Professor. Her research interests are in biological and medicinal chemistry (cytochrome P450 enzymes that synthesise steroids and membrane activity of antimicrobial peptides) and charge transfer materials based on TTF and TCNQFx compounds. She has worked with Alan Bond since her Ph.D. days and currently enjoys working with him on one of the three ARC Discovery grants which they have shared.



Anthony O'Mullane received his Ph.D. degree in 2001 from University College Cork and completed postdoctoral fellowships at Technische Universität Darmstadt, the University of Warwick, and Monash University with Alan Bond. He previously held a position at RMIT University (Australia) from 2008 until 2013, when he moved to QUT. He is a Fellow of the Royal Society of Chemistry and Royal Australian Chemical Institute. His research interests are the electrochemical synthesis and characterisation of nanostructured materials, electrocatalysis, Li metal-based batteries, and the application of electrochemical methods to various aspects of physical, chemical, and biological science. He has worked with Alan Bond since 2004 and continues to collaborate with him.

12 years at Deakin, Alan decided to accept an appointment at La Trobe University in 1990, once again, geographically not too far from either Deakin or the University of Melbourne. His time at La Trobe was prodigious in terms of publications and awards; this was where he added to his Fellowship of the Royal Australian Chemical Institute (1982) by becoming a Fellow of the Royal Society of Chemistry (1990) and a Fellow of the Australian Academy of Science (1991).

Five years later, in 1995, Alan moved 50 km to Monash University, initially as Professor of Chemistry, but later as ARC Professorial Fellow (2000–2002), Federation Fellow (2005–2010), and R. L. Martin Distinguished Professor of Chemistry (2004–2011) before accepting an emeritus appointment in 2012. Alan currently has a fractional appointment at Monash where he heads an active research group and holds two Australian Research Council Discovery grants. His impact on electroanalytical science continues to grow with an average of 24 papers per annum published during this period, a number which is still increasing. Importantly, his passion and enthusiasm for his research is as great as ever and ‘those little grey cells’ are still alive with new ideas and ways to tackle problems.

To quote Alan regarding his *modus operandi*: ‘*By their very nature, electrochemical techniques require the knowledge and use of a broad spectrum of research disciplines such as reaction mechanisms, kinetics (both homogeneous and heterogeneous), solution equilibria, thermodynamics, redox reactions, synthetic chemistry, etc. in addition to a detailed understanding of modern, particularly computer-based instrumentation and electrochemical theory. The techniques can therefore be applied to research problems in many areas and extensive collaborative work with other research groups provides considerable stimulus to the methodology, theory and instrumental work developed by my own research group.*’

Alan's list of awards and achievements is extensive. In historical order, these include:

Melbourne University Research Grant Award 1967; Commonwealth Post-Graduate Award 1968–1970; Peter W. Dickenson Memorial Prize for 1970 (Melbourne University chemistry department research prize); Australian-American Educational Foundation Award 1972 (former Fulbright Award); Rennie Medal 1975 (Royal Australian Chemical Institute award for chemical research); David Syme Prize 1978 (prestigious award in Australian science).

Australian Jaycees Outstanding Young Australian Award (Victorian Section) 1979; UK Science and Engineering Research Council; Senior Visiting Research Fellow Award 1983; Australian Analytical Chemistry Medal 1989 (award given by the Analytical Chemistry Division of the Royal Australian Chemical Institute); Japan Society for the Promotion of Science Fellowship 1990; Royal Society of Chemistry Lecturer in Australia 1990.

150th Anniversary Robert Boyle Fellowship awarded by the Royal Society of Chemistry 1991; Stokes Medal 1992 (award given by the Electrochemistry Division of the Royal Australian Chemical Institute); Liversidge Award 1992 awarded by The Australian and New Zealand Association for the Advancement of Science; Erskine Fellowship 1993 awarded by Canterbury University, Christchurch, New Zealand; Federation of Asian Chemical Societies 1993 Foundation Lectureship award presented at the 5th Asian Chemical Congress held in Kuala Lumpur, Malaysia, 1993; Australian Research Council Special Investigator Award 1997–1999; Royal Society of Chemistry Award for Electrochemistry 1997; Hinshelwood Lectureship,

University of Oxford, 1998; Christensen Fellowship, St Catherine's College, University of Oxford 1998; H. G. Smith Medal 1998 (Royal Australian Chemical Institute).

Inaugural Gutman Lecturer 1999 (Royal Australian Chemical Institute, Electrochemistry Division); Royal Society of Victoria Medal for Research Excellence 1999; Burrows Medal 2000 awarded by the Inorganic Chemistry Division of Royal Australian Chemical Institute; Faraday Medal of the Royal Society of Chemistry Electrochemistry Group 2000; Governor General's Centenary Medal for Service to Australian Society and Science in Electrochemistry, 2003; Vallee Visiting Professor, University of Oxford, 2004; Craig Medal awarded by the Australian Academy of Science 2004; C. N. Reilly Award from the Society of Electroanalytical Chemistry (USA), 2005; Gold Medal, *Electrochimica Acta*, Senior Award of International Society of Electrochemistry, 2014.

In addition to Alan's academic appointments:

Senior Demonstrator, Department of Inorganic Chemistry, University of Melbourne, Parkville, Victoria, Australia (1970–1973); Research Fellow, Department of Inorganic Chemistry, University of Melbourne, Parkville, Victoria, Australia (1973–1978); Foundation Professor of Chemistry, Division of Chemical and Physical Sciences, Deakin University, Geelong, Victoria, Australia (1978–1990); Professor of Chemistry, School of Chemistry, La Trobe University, Bundoora, Victoria, Australia (1990–1995); Professor of Chemistry, Monash University (1995–present) including Australian Research Council Professorial Fellow (2003–2007); Federation Fellow (2005–2010); R. L. Martin Distinguished Professor of Chemistry, Monash University (2004–2011); and Emeritus Professor, Monash University (2012–present).

Also, he has held several visiting and consultative positions:

Visiting Associate Professor, Department of Chemistry, Northwestern University, Evanston, Illinois, USA (May–September 1972), Fulbright Fellowship; Visiting Professor, Department of Chemistry, Northwestern University, Evanston, Illinois, USA (1976); Hartung Lecturer, 1981 (Victorian Branch, Royal Australian Chemical Institute appointment for a series of youth lectures in chemistry); Senior Research Fellow, Department of Chemistry, University of Southampton, Southampton, England (May–December 1983); Visiting Professor, Inorganic Chemistry Laboratory, University of Oxford, Oxford, England (May–December 1988); Royal Society of Chemistry Lecturer in Australia, 1990; 150th Anniversary Robert Boyle Fellow, Royal Society of Chemistry appointment held at University of Oxford, Oxford, England (March–December 1991); member of the Council of the Australian Academy of Science (1993–1996) and Vice President (1995–1996); member of the Chemistry Panel of the Australian Research Council (1993–1995); Hinshelwood Lecturer, Physical and Theoretical Chemistry Laboratory, University of Oxford, Oxford, England (1997–1998); member of Sectional Committee 3, Chemistry, Australian Academy of Science (1997–2001) and Chair (1999–2001); Pasmenco Lecturer, University of Tasmania, September 1999; Visiting Honorary Professor, Xiangfan University, Hubei Province, China, 2007–; member of International Board of 42nd IUPAC Congress (August 2009).

Membership of numerous Editorial Boards; ‘Science Editor’ in the field of chemistry for Marcel Dekker, New York, USA (1972–2002); Oxford Biosensors, Oxford, UK (2002–).

Associate Member of International Union of Pure and Applied Chemistry Electroanalytical Commission (V.5), 1989–1998; International Panel member for review of UK chemistry research commissioned by the UK's Engineering

and Physical Sciences Research Council (EPSRC) and coordinated by the Royal Society of Chemistry, 2002; Foreign Member of the Academic Commission of the State Key Laboratory of Electroanalytical Chemistry, China, 2002–; Visiting Professor, University of Oxford, April–December 2003; Vallee Visiting Professor, University of Oxford, May 2004; Visiting Professor, School of Chemistry, University of Sydney, May–June 2005, Foundation for Inorganic Chemistry 2005 lectures; member, EPSRC Peer Review College (UK), 2006–2014; External Academic Advisor (EAA) for the Department of Applied Chemistry, Faculty of Science and Engineering, City University of Hong Kong, 2009–2014; International Society of Electrochemistry, Chair Elect 2009–2010, Chair 2010–2012, Past Chair 2013–2014; Visiting Professor, University of Sydney, 2014; Hans C. Freeman Lecturer, University of Sydney, 2014.

In summary, Alan has made an outstanding contribution to inorganic and electroanalytical chemistry both in Australia and internationally. He remains enormously keen to foster and mentor young scientists, many of whom have gone on to highly successful careers in academia and industry. At any one time in Alan's laboratory at Monash, there would be a mix of honours and Ph.D. students, postdoctoral fellows, academic colleagues, and overseas visitors contributing to the many areas of electrochemistry, making it a productive, highly engaging, and enjoyable environment. This also resulted in excellent group lunches every second Wednesday where the issues of the day were discussed. Finally, the 'sparkle that appears in his eyes' when he has data or challenging results that defy the obvious interpretation – these are the hallmarks of Alan Bond.

Thanks from us all.